## IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method for routing a packet comprising:

dedicating a separate routing table to each domain of a plurality of domains for use in routing packets propagating that domain;

receiving the packet from one of the plurality of domains through one of a plurality of interfaces; ~~and~~

determining one of the routing tables for the packet according to a mapping array, the mapping array including pointers that associate the interfaces with the routing tables; and

updating the determined routing table when the received packet is a control packet, wherein receiving the packet, determining one of the routing tables, and updating the determined routing table are performed by executing a single IP stack.

2. (Cancel)

3. (Original) The method of claim 1 wherein the mapping array associates interfaces connecting to the same address domain with the same routing table.

4. (Original) The method of claim 1 further comprising, after the one routing table is determined, forwarding the packet according to the one routing table if the packet is a data packet.

5. (Cancel)

6. (Original) The method of claim 1 wherein each of the plurality of address domains represents a virtual private network.

7. (Currently Amended) A router comprising:

a plurality of separate routing tables, each routing table being dedicated to one of a plurality of address domains for use in routing packets propagating that address domain;

interfaces through which packets from the address domains are received; and

a domain manager, which includes a mapping array for determining one of the routing tables for the received packets, the mapping array including pointers that associate the interfaces with the routing tables, wherein the domain manager is capable of updating a determined routing table and wherein the domain manager executes a single IP stack to receive the packet, determine the one routing table, and update a determined routing table.

8. (Cancel)

9. (Original) A router of claim 7 wherein the mapping array associates interfaces connecting to the same address domain with the same routing table.

10. (Original) The router of claim 7 wherein the domain manager forwards the packet according to the determined one routing table if the packet is a data packet.

11. (Cancel).

12. (Original) The router of claim 7 wherein each of the plurality of address domains represents a virtual private network.

13. (Previously Presented) A computer program product residing on a computer readable medium comprising instructions for causing the computer to:

dedicate a separate routing table to each domain of the plurality of domains for use in routing packets propagating that domain;

receive the packet from one of a plurality of address domains through one of a plurality of interfaces; ~~and~~

determine one of the routing tables for the packet according to a mapping array, the mapping array including pointers that associate the interfaces with the routing tables;

update the determined routing table when the received packet is a control packet; and

execute a single IP stack to receive the packet, determine one of the routing tables, and update the determined routing table.

14. (Cancel).

15. (Original) The computer program product of claim 13 wherein the mapping array associates interfaces connecting to the same address domain with the same routing table.

16. (Original) The computer program product of claim 13 further comprising instructions for causing the computer to, after the one routing table is determined, forward the packet according to the one routing table if the packet is a data packet.

17. (Cancel)

18. (Original) The computer program product of 13 wherein each of the plurality of address domains represents a virtual private network.

19. (Currently Amended) A method for routing a packet, comprising:

dedicating a separate routing table to each address domain of a plurality of address domains;

connecting at least one interface to each address domain of the plurality of address domains;

associating each interface with one of the separate routing tables;

receiving the packet from a given one of the plurality of address domains through a given one of the plurality of interfaces; and

associating the packet with the given interface through which the packet is received; ~~and~~

selecting one of the separate routing tables for routing the packet based on the given interface with which the packet is associated; and

updating the selected routing table when the received packet is a control packet, wherein receiving the packet, selecting one of the routing tables, and updating the selected routing table are performed by executing a single IP stack.

20. (Previously Presented) The method of claim 19, wherein the step of associating the packet with the given interface includes inserting an identifier of the given interface into the packet.